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|-------------------------------|-----------------------------|------------------|--|
| <b>Notice of Allowability</b> | Application No.             | Applicant(s)     |  |
|                               | 10/634,592                  | KOZAWA ET AL.    |  |
|                               | Examiner<br>Laura S. Weiner | Art Unit<br>1745 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 7-14-06.
2.  The allowed claim(s) is/are 1-5 and 8.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: Japan 2002-14177, Japan 2003-185790 and Japan 2003-185791 have not been received.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date 20060816.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Cornelius O'Brien on 8-15-06.

The application has been amended as follows:

**IN THE CLAIMS**

In Claim 2, line 2, change "fine lignin" to --fine coniferyl alcohol lignin--.

Insert In Claim 2, line 2, insert after "0.6"; -- micron--.

In Claim 4, line 2, change "the electrolyte" to --the sulfuric acid electrolyte--.

In Claim 5, line 2, change "electrolytes also contain" to --electrolyte also contains--.

In Claim 8, line 2, change "the electrolyte" to --the sulfuric acid electrolyte--.

CANCEL claim 14.

2. The following is an examiner's statement of reasons for allowance:

Claims 1-5, 8 are allowable over the prior art of record because no reference was found teaching an lead-acid battery having a sulfuric acid electrolyte containing an organic polymer and in addition to an ultrafine coniferyl alcohol lignin which has a particle size between about 0.01 and about 0.8 micron.

Ikeda et al. (JP 2001-313064, abstract) teaches a lead storage battery including polyacrylic acid and polyvinyl alcohol in an electrolyte. An additive consisting of stannous sulfate, stannic sulfate and colloid-like lead sulfate. At least 1 kind in a group consisting of polyacrylic acid, polyacrylic acid ester and polyvinyl soluble lignin. Ikeda et al. does not teach using a coniferyl alcohol lignin which has a particle size between about 0.01 and about 0.8 micron.

Sawai et al. (6,475,676) teaches a lead acid battery comprising a separator containing an organic compound which is preferably lignin. Sawai et al. teaches in column 2, lines 12-21, that the average particle size of the lignin is not larger than 10 um but not less than 0.05 um. Sawai et al. teaches that the lignin is present in the separator and not in the electrolyte.

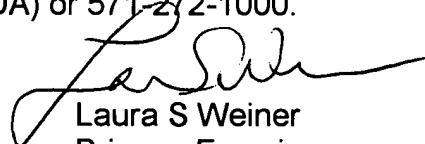
Taguchi et al. "Role of lignin on depressing of anomalous growth of Pb negative electrode during charge-discharge cycling" (abstract) teaches a lead-acid battery containing a negative electrode comprising Pb as the active material and a natural polymer lignin. When the lignin is not present during repeated charge-discharge cycling in a sulfuric acid solution, an anomalous growth of acicular precipitate is observed on the negative electrode. The growth is depressed by the addition of lignin to the electrolyte. The lignin has both a water-repellent carbon chain and several water-acid functional groups, such as sulfonic acid. Taguchi et al. does not teach using a coniferyl alcohol lignin which has a particle size between about 0.01 and about 0.8 micron.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Laura S Weiner  
Primary Examiner  
Art Unit 1745

August 16, 2006